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Trumbull Soil and Water Conservation District Resources Inventory

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United States Department of Agriculture

Soil Conservation Service

Ohio

A57.38/2:

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INTRODUCTION

In 1982, the Trumbull Soil and Water Conservation District (SWCD), in cooperation with the USDA, Soil Conservation Service (SCS) took part in the National Resources Inventory (NRI). Information was collected on over 300 sample units to provide county reliable resource data.

This inventory provided natural resource data on (1) land use, (2) conservation treatment needs, (3) prime farmland, (4) potential cropland, (5) sheet and rill erosion, (6) flood prone areas, (7) wetlands, and (8) small bodies of water.

The study identifies erosion and land management problems in Trumbull County. These problems were addressed and priorities set in the District's long-range program. Top priorities include:

1. To protect the soil resource base of Trumbull County through sound natural resource management, thus improving the water quality for the county.

2. To improve and protect the drainage of Trumbull County through sound watershed management.

3. Increase public awareness through an active information program.

This publication distributes the results of the Trumbull County Resources Inventory. The publication describes the soil resource base and highlights some problems that could reduce future soil productivity. Along with reduced production, off site damages could be expected. A primary objective of the Trumbull SWCD is to promote the wise use of the soil resource base in Trumbull County.

The information in this publication, like all information developed from a statistical study, has varying degrees of reliability or confidence levels. All values expressed here, representing over 10 percent of the county area, have a confidence level greater than 90 percent or they are at least 90 percent accurate. Smaller values, those representing less than 10 percent of the total county area, will be less than 90 percent accurate.

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September 1985

Land Use

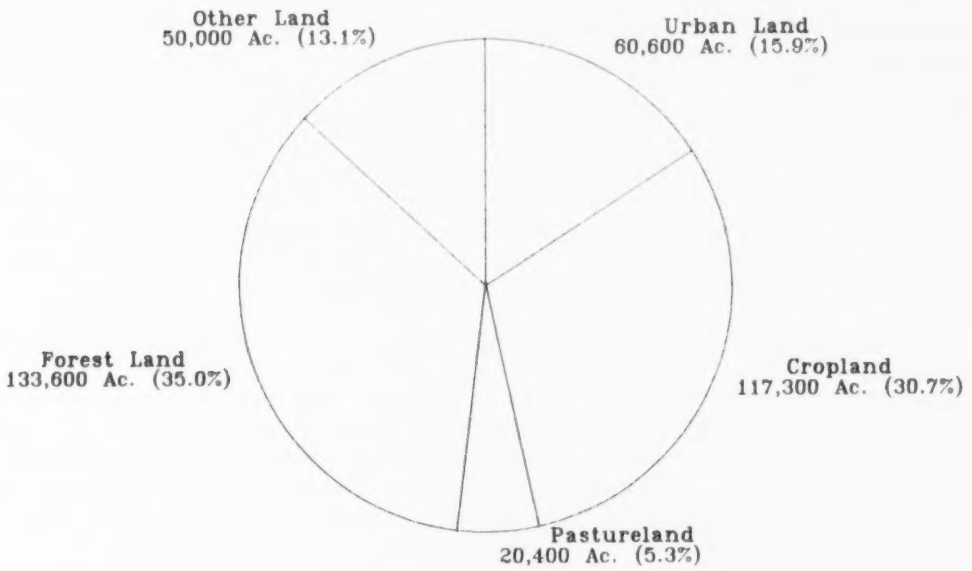
Land area measurements were made for Trumbull County during the 1980 Census by the U.S. Department of Commerce.

Table 1. Trumbull County Area Measurements

Nonfederal Land and Small Bodies of Water	381,900 Acres
Federal Land	9,700 Acres
Census Water (Large Bodies of Water)	15,400 Acres
Total Surface Area	407,000 Acres

This report addresses only nonfederal land.

Figure 1. Trumbull County Land Use



TOTAL NONFEDERAL ACREAGE IN TRUMBULL COUNTY = 381,900 ACRES

KEY POINTS:

- o Forest land is the largest land use in the county.
- o Cropland is the second largest land use in the county.

Land Use by Capability Class

Soils can be classified in a number of ways. SCS uses a land capability classification system that groups soils on the basis of their ability to produce common cultivated crops and pasture plants without deterioration. Land capability classes and subclasses in Trumbull County are based on the soil survey.

Capability classes are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of agricultural use.

Class III soils have severe limitations that reduce the choice of agricultural use.

Class IV soils have very severe limitations that reduce the choice of plants, or that require very careful management, or both.

Class V soils are not likely to erode but have other limitations.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

Each capability class except Class I has subclasses to identify specific limitations. The letter "e" stands for erosion risk; "w" for wetness; and "s" for soils limited mainly because they are shallow, droughty, or stony.

Table 2. Rural Nonfederal Land Use Acreage by Capability Class

CLASS	CROPLAND Acres	PASTURELAND Acres	FOREST LAND Acres	OTHER RURAL LAND Acres	TOTAL
I	0	0	400	0	400
II	40,000	8,800	47,500	7,600	103,900
III	74,100	10,200	77,300	17,800	179,400
IV	3,200	1,400	6,600	1,300	12,500
V	0	0	500	0	500
VII	0	0	1,300	0	1,300
NA	0	0	0	6,300	6,300
TOTAL	117,300	20,400	133,600	33,000	304,300

KEY POINTS:

- o Ninety-seven percent of all cropland is on Classes II and III.
- o Ninety-eight percent of all forest land is on Classes II, III and IV.
- o Ninety-three percent of all rural nonfederal land use is on Classes I, II, and III.

Prime Farmland

Prime farmland is one of several kinds of important farmlands defined by the U.S. Department of Agriculture. It is of major importance in providing the Nation's short and long range needs for food and fiber. Prime farmland soils are defined as the soils that are best suited to producing food, fiber, forage, feed, and oilseed crops. Such soils have properties that are favorable for the economic production of sustained high yields of crops. Prime farmland soils produce the highest yields with minimal inputs of energy and economic resources. Farming these soils results in the least damage to the environment.

Prime farmland is also the easiest and least costly to develop for non-agricultural uses. Urbanization and other land uses have the potential to consume significant areas of prime farmland. Decisions need to be made at the local level to encourage wise use of agricultural lands.

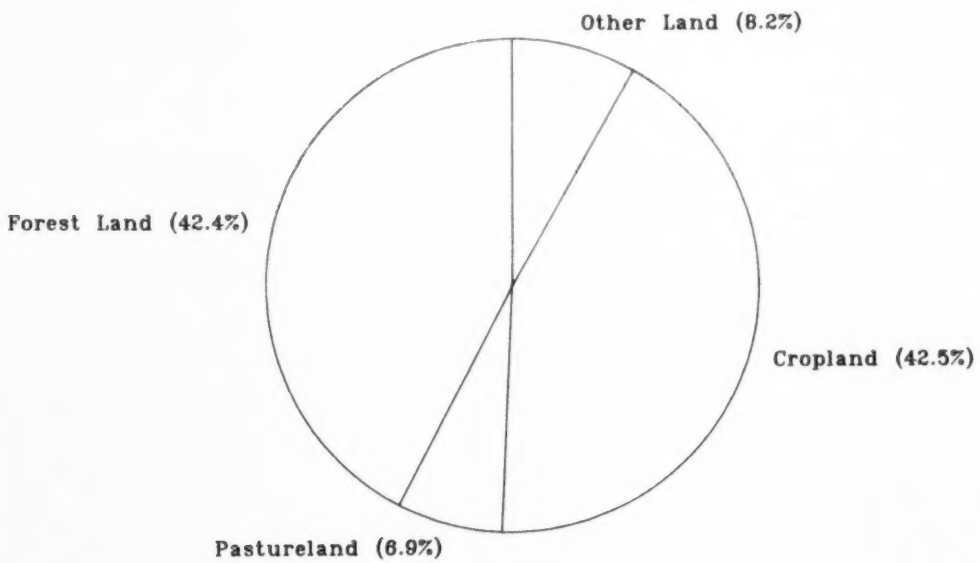
Trumbull County has about 212,600 acres of prime farmland with almost all of it in Capability Classses I, II, and III.

Table 3. Prime Farmland by Rural Nonfederal Land Use

LAND USE	TOTAL ACRES	PRIME FARMLAND	
		Acres	Percent
Cropland	117,300	90,400	77
Pastureland	20,400	14,700	72
Forest Land	133,600	90,100	67
Other Land	33,000	17,400	53
TOTAL	304,300	212,600	70

Most of the prime farmland in the county is currently forest land and cropland. Figure 2 illustrates the uses of prime farmland.

Figure 2. Use Of Prime Farmland
Trumbull County



Soil Erosion

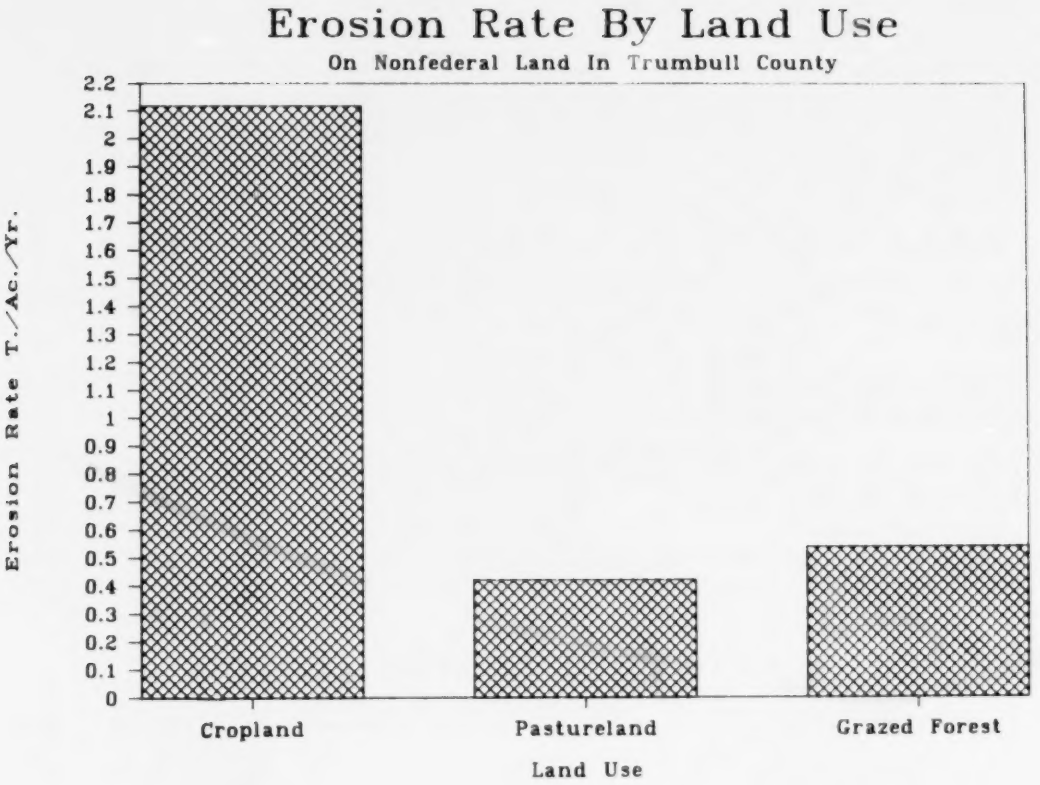
Soil erosion is a continuously occurring natural process that loosens and transports soil particles. Erosion occurs slowly on undisturbed forest land and areas with adequate permanent vegetative cover. Soil losses are quite high on sloping cropland that is continually cultivated and left unprotected during several months every year.

Over 262 thousand tons of topsoil erode on Trumbull County agricultural land annually. Over 95 percent of the erosion is on cropland.

Table 4. Annual Soil Erosion by Agricultural Land Use on Nonfederal Land

LAND USE	ACRES	TONS	TONS/ACRE
Cropland	117,300	248,600	2.1
Pastureland	20,400	8,600	0.4
Grazed Forest Land	1,300	700	0.5
Ungrazed Forest Land	132,300	4,700	0.0
TOTAL	271,300	262,600	
AVERAGE			1.0

Figure 3.



KEY POINT:

o Cropland has the highest erosion rate.

Most of the erosion on cropland is occurring on land that is in continual row crops and tilled in the spring and/or fall plowed. One of the most efficient ways of controlling this erosion problem is to use conservation tillage. Conservation tillage protects the soil from erosion by leaving crop residue on the soil surface.

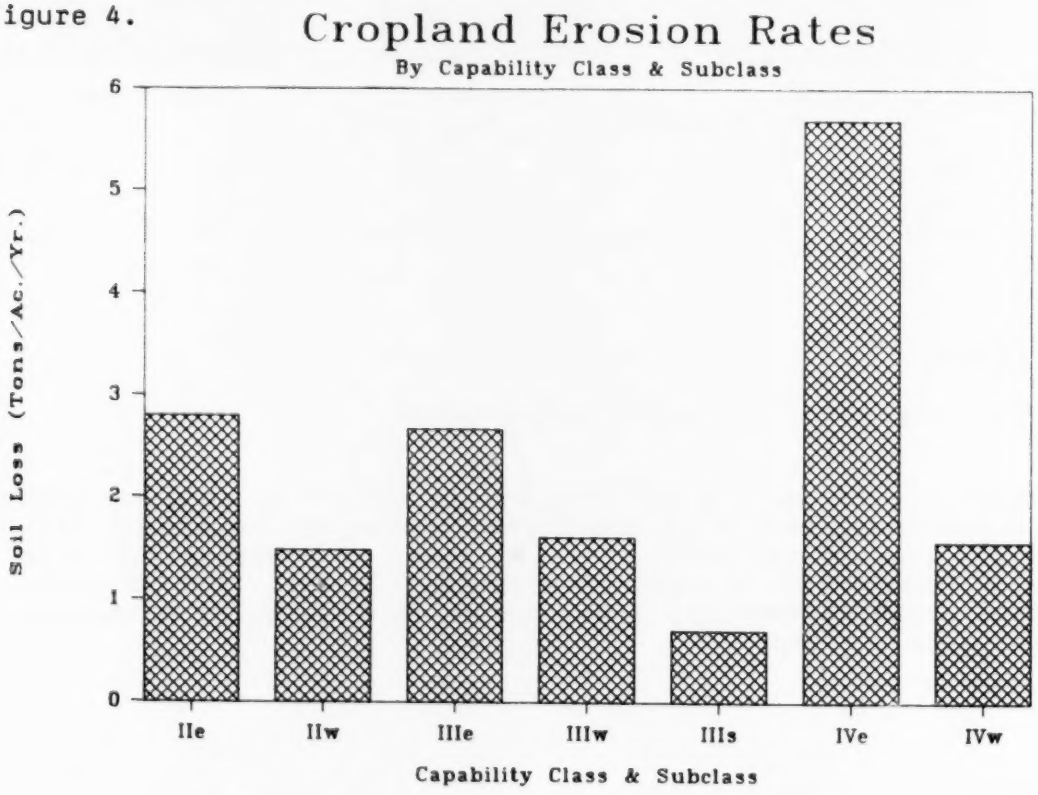
Table 4. Erosion on Nonfederal Cropland by Capability Class and Subclass

CLASS AND SUBCLASS	ACRES	TONS	TONS/ACRE
IIe	23,700	66,500	2.8
IIw	16,300	24,300	1.5
IIIe	27,500	73,500	2.7
IIIw	44,900	72,700	1.6
IIIs	1,700	1,200	0.7
IVe	1,300	7,400	5.7
IVw	1,900	3,000	1.6
TOTAL	117,300	248,600	
AVERAGE			2.1

KEY POINTS:

- o Ninety-six percent of all cropland erosion is on Classes II and III soils.
- o IVe soils have the highest erosion rate, but acreage is limited in the county.
- o Fifty-nine percent of all the erosion on cropland occurs on IIIe, IIIw, and IIIs soils.

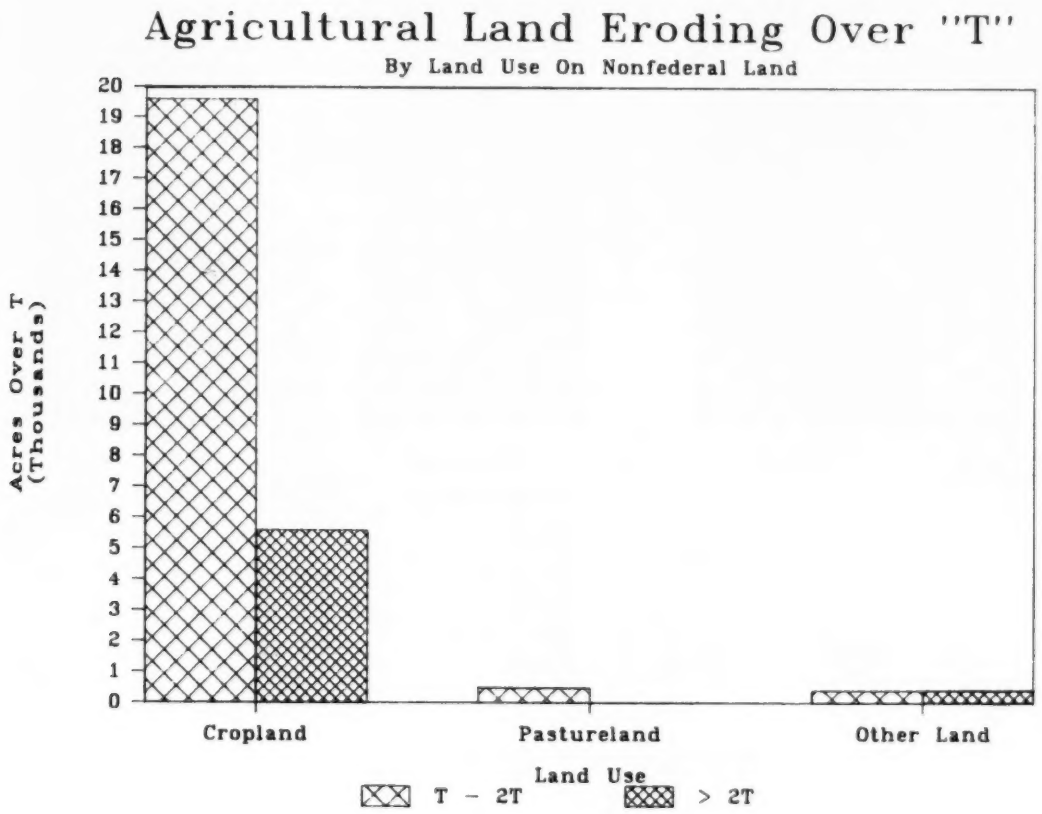
Figure 4.



Soil can tolerate small amounts of erosion and remain productive for agriculture. When erosion is above this tolerable limit, the soil resource base cannot be maintained and the future ability of the soil to produce crops is threatened. The tolerable soil loss ("T") ranges from three to five tons per acre per year for the soils in Trumbull County.

Almost 26,500 acres are eroding at rates greater than "T". There are 6,000 acres in the county eroding at rates greater than two times "T". These acres represent a serious threat to the productive capacity of the soil resource base.

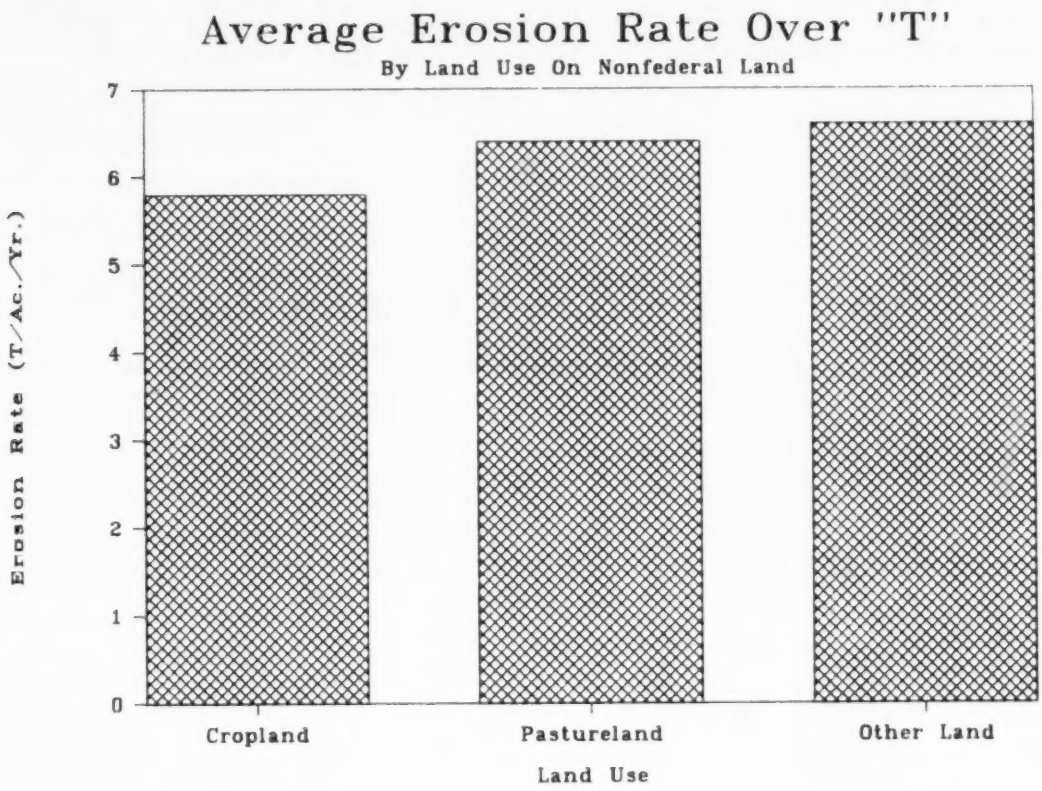
Figure 5.



KEY POINT:

- o Ninety-five percent of all land eroding over "T" is cropland.

Figure 6.

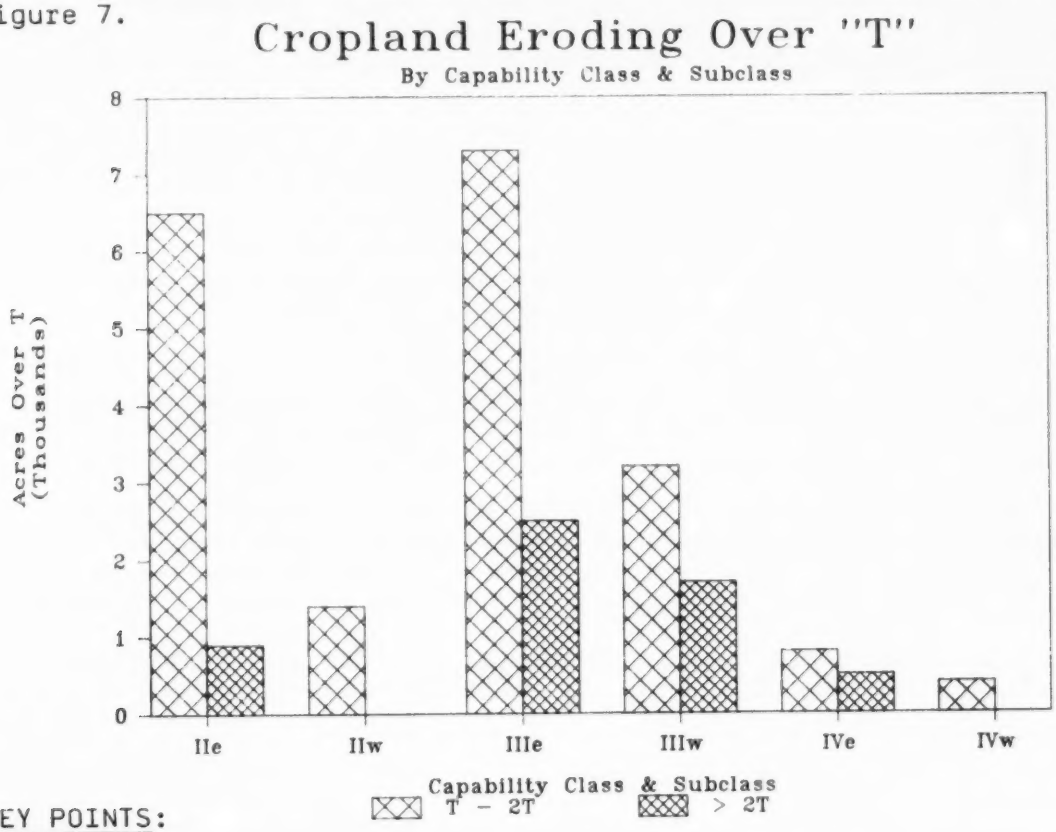


Cropland is located on the better soils in the county (see Tables 2 and 3). One out of every five of these highly productive cropland acres are eroding excessively.

Table 6. Nonfederal Cropland in Relation to "T" by Capability Class and Subclass

CAPABILITY CLASS	TOTAL	LESS THAN "T"	"T" - "2T"	GREATER THAN "2T"
	----------ACRES----------			
IIe	23,700	16,300	6,500	900
IIw	16,300	14,900	1,400	0
IIIe	27,500	17,700	7,300	2,500
IIIw	44,900	40,000	3,200	1,700
IIIs	1,700	1,700	0	0
IVe	1,300	0	800	500
IVs	1,900	1,500	400	0
TOTAL	117,300	92,100	19,600	5,600

Figure 7.



KEY POINTS:

- Twenty-two percent of all cropland, over 25,000 acres, is eroding over "T".
- Five percent of all cropland is eroding over "2T".
- Ninety-three percent of all areas eroding over "T" are in Classes II and III.

Conservation Treatment Needs

Many acres of Trumbull County agricultural land need one or more different types of conservation treatment to either protect or improve soil and water resources. The different conservation practices used to accomplish these objectives vary by land use.

Cropland treatment usually involves practices like conservation cropping systems, conservation tillage, contour farming, contour stripcropping, terraces, and subsurface drainage systems. Pastureland practices include rotational grazing, pasture management, and pasture planting. These practices may be used to protect or improve the soil, water, and plant resources. Conservation practices needed on forest land may include livestock exclusion, timber stand improvement, and tree planting. Land designated as adequately protected is properly managed for production and protected from excessive erosion.

Table 7. Conservation Treatment Needs and Percent by Land Use on Nonfederal Land

LAND USE	TOTAL ACRES	TOTAL ACRES NEEDING TREATMENT	% TOTAL ACRES NEEDING TREATMENT
Cropland	117,300	51,200	44
Pastureland	20,400	10,300	51
Forest Land	133,600	97,200	73
Other Land	33,000	1,300	4
TOTAL	304,300	160,000	53

Figure 8.

CONSERVATION TREATMENT NEEDS

BY LAND USE / PERCENT OF TOTAL NEEDS

SUMMARY

Agriculture accounts for 84 percent of Trumbull County land use with 31 percent used as cropland. About 70 percent of Trumbull County is prime farmland.

Serious erosion problems exist on cropland and grazed forest land. Twenty-two percent of all cropland is losing soil at excessive rates. Productivity will be reduced if erosion is allowed to continue at these high rates.

Conservation treatment is needed to conserve the resource base or increase productivity on over 50 percent of all agricultural land.

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